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Characteristics of the river basins: Mississippi, Mackenzie, Hudson Bay System.

Value of the great plain in the development of the continent.

Would a different arrangement of lowlands and highlands improve the continent as a home for man?

4. Eastern Highlands: Extent, appearance, geologic formation of (a) Canadian Highlands, (b) Appalachian System: New England Mountains; Blue Ridge; Appalachian Valley; Alleghany Forest; Alleghany Plateau; Piedmont.

Account for the position of Delaware, Susquehanna, Potomac, New, and Tennessee rivers. What is the effect of the Piedmont region on the rivers which cross it?

What is the value of the Appalachian Highlands to the present inhabitants of the United States?

In what way did they aid the colonists? What disadvantage were they to the colonists? What influence did they exert on the Civil War?

(c) Characteristics of St. Lawrence River basin?

5. Coastal Plain: Extent; appearance; formation; agricultural value. What influence did the coastal plain exert on early settlement? On the Civil War?

Materials which will be used in the development of the subject: Relief, physical, contour, geologic maps of North America and United States; geological portfolios; U. S. weather maps; crop bulletins; photographs; projected pictures; charts; diagrams.

References: Mill, *International Geography*, pp. 660-790; *Compendium of North America*; Reclus, *Earth and its Inhabitants*; Shaler, *The United States of America*; Davis, *Physical Geography*; *National Geographic Monograph*; Willis, *The Northern Appalachians*; Hayes, *The Southern Appalachians*; Davis,

Physical Geography of Southern New England; Russell, *Rivers of North America*; Russell, *Lakes of North America*; Russell, *Volcanoes of North America*. See library reading list on North America.

Expression: The students will be required to model in sand the relief of the continent of North America and the different sections studied; to draw the same in relief on the blackboard and on paper; to make paintings and blackboard drawings of certain typical regions, as of the tropic plains, tropic mountain regions, and regions of Western United States and Mexico, Alaskan fjords and glaciers, northern and central plain, Appalachian region.

Besides discussions in class, the different committees will give illustrated talks on different parts of the country assigned for special study.

In what grade should continental study be introduced?

What kind of maps should be used at the beginning of geographic study?

How can a map be used to perform its function as a symbol?

Why do maps stand in the way of imaging the landscapes which they represent?

What laboratory experiments would aid in imaging North America?

What aspect of the country appeals most to younger pupils?

When should the physical geography of the continent be taught?

Correlation of German

Dr. Siegfried Benignus

It is generally acknowledged that the ideal method of studying German is to go to Germany, study under an experienced teacher, mingle with the educated part of the people, read newspapers, go frequently to the theatre, and attend public meetings

and lectures. Since it is possible for only a few to use this best method, we must devise the means in our own environment to realize the most favorable conditions.

Many of the grammars used in school and private instruction are very faulty

in giving the student disconnected and meaningless sentences to work upon. The instruction resulting makes the living language an instrument that is useless in most of the affairs of practical life; and the victim of such instruction, when he comes in contact with the genuine language, execrates grammar and teacher. Nothing that is not at least good, every-day German should be taught. The student should occupy his mind and store his memory with nothing but forms such as Germans use. He must never think that he can speak or write German by patching together words with the help of his grammar and dictionary, for the natural sentence, not the word, is the unit of language. Whatever may be the pupil's object in view—speaking, writing, reading, or scholarship—from the very beginning he must be sensitive to the best German. He must think in German, dream in it, joke in it, live in it, as he does in his own tongue. That is to say, he must learn German in the same way and with the same means as he learns English. To attain this end, there is no better help than correlation with the other branches of study.

A good means of acquiring a working knowledge of German idioms is by the use of the language in mathematical work, both pure and applied. With this in view, suitable exercises will be carried through all classes and grades from the time the language is first taken up. For the first year (age 10) the following and similar exercises:

I. Absolute numeral problems:

- (1) $42 + 35 = ?$
- (2) $63 - 18 = ?$
- (3) $12 \times 8 = ?$
- (4) $84 \div 12 = ?$

If the pupils are found able to handle fractions properly, graded exercises in multiplication and division of fractions will be given.

II. Concrete numeral problems:

- (1) Mary lives in Frankfort on the Oder, 80 kilometers west of Berlin; her cousin Fred

lives in Brandenburg, 60 kilometers east of Berlin. How many miles is it from Mary's home to Fred's?

- (2) William bought a knife; the price was a quarter of a dollar. He gave the salesman a dollar. What change should William receive?

- (3) The side of a square is 9 meters long. How far is it around the square? What is its area?

- (4) James bought apples at the rate of 3 Pfennige for 5 apples, and sold them at the rate of 5 Pfennige for 3 apples. If he bought and sold 30 apples, did he gain or lose money, and how much?

This work will be extended to fractional problems, if pupils are found capable of profiting by them.

The work for the Sixth, Seventh, and Eighth Grades (forming one class) will be such as the following:

I. Oral arithmetic:

- (1) Helen paid $\frac{3}{4}$ Mark for coffee and $\frac{1}{4}$ Mark for tea. How much did she pay for both?

- (2) In an orchard 25% of the trees bear cherries. What per cent of the trees bear other fruits?

II. Mental arithmetic:

- (1) Henry traveled 200 miles in three days, 25% of which he traveled the first day and 45% the second day. How far did he travel the third day?

- (2) What is the amount of 200 Marks for 1 year and 8 months at 6%?

The mathematical work for the High School until July may be judged from these topics:

History of mathematics:

Read up in Cantor's *Vorlesungen über die Geschichte der Mathematik*, Vol. I; and Ball's *History of Mathematics*, in the library, and report in writing on the following topics: Egyptian and Phœnician mathematics. Did the Greeks learn their mathematics from the Egyptians? Greek schools of mathematics. When and by whom founded? What did they teach? How long did they flourish?

- (1) The Ionian School, (2) the Pythagorean School, (3) other schools. Schools at Athens and Cxyzus. Chinese mathematics and mathematicians. Hindu mathematics and mathematicians. Did mathematics originally start from experimental data?

Algebra:

What can you find about the beginning of algebra? With what nation did it begin? To what particular branch of mathematics did the

Arabs give most attention? Whence do we derive the arithmetical numerals 1, 2, 3, etc.? When did Diophantus live and teach? What particular things do we derive from him? When were Arabian mathematical works introduced in Europe? Explain how to multiply $a^2+b^n-c^8$ by $x^3-y^3+z^6$, and read the following expressions in German: $a \times x \times \sqrt{z}$; $\frac{x}{y}$; $z^{\frac{5}{8}}$; x^n ;

$\sqrt{\frac{x+y}{a+b}}$; $(a+b)(c-d)$; $a^2-b^2=(a+b)(a-b)$.

Let each member of the class present one or more essays on an eminent algebraist.

As observational work in astronomy can best be done during May, this important mathematical subject will be given exclusive attention during that month. Special attention will be given to the German of such subjects as these: Where and when do the sun, moon, planets, and certain bright stars rise, culminate, and set? How long is the sun above the horizon on any given day? How long below? Answer same questions regarding moon and planets. What planets are evening stars during May? What planets morning stars? What phases does the moon exhibit on the successive days of May? New moon, first quarter, full moon, and last quarter. Magnitudes of the brightest stars of the Great Bear, and other constellations. Names of the brightest stars visible during May. German myths relating to the constellations. Give a full description of an evening's study of the stars in the astronomy class. Write an essay on the colors of the stars. Tell all you know about variable stars, double stars. Describe a telescope. Write an essay proving from your own observations that the moon always turns the same face to the earth. Write an essay on the subject of the sun. Why does the sun never show phases? Look up in *Popular Astronomy*, in the library, the aspects of the planets for May, and locate on the sky where they all are. Make a report in German of the substance of any article in which you are interested.

References in *Popular Astronomy*: Diesterweg, *Populäre Himmelskunde*, 17th edition, 1892; Mädler, *Der Wunderbau des Weltalls*, 8th edition, 1887; I. I. von Littrow, *Die Wunder des Himmels*, 7th edition, 1885; Gretscher, *Lexikon der Astronomie*, 1882; Garret P. Serviss, *Astronomy with an Opera-glass*, 1899; J. Herschel, *Outlines of Astronomy*, 11th edition, 1871; Newcomb, *Popular Astronomy*.

The other branches of study may likewise be correlated. Accordingly the composition work for January will be a selection of general interest in zoology adapted to the capacities of the different classes, as was done in December with the subject of the Rhine.

Animal protections:

(1) shields, e.g. armadillo, turtles, beetles, mollusks.

(2) scales, e.g. fish, reptiles.

(3) quills, e.g. hedgehog, porcupine, sea-cucumber.

(4) stings, e.g. insects, stingray.

(5) nettle-organs, e.g. jelly-fish; burning hairs, e.g. caterpillars.

(6) feigning death, e.g. insects, opossum.

(7) secretions, nauseous, e.g. skunk, mink; colored, e.g. bombardier-beetle, seacat, cuttle-fish; slimy, e.g. eel.

(8) nests, e.g. birds.

(9) cocoons, e.g. insects.

(10) protective colorations, generally resembling surroundings; polar animals, mostly white; desert animals, yellow as sand; leaf animals, green or gray; water animals, transparent or slightly tinged with blue; land animals, color of ground.

(11) Rapid change of color, e.g. chamæleons, other lizards.

(12) masking, e.g. crabs, sea-urchin.

(13) mimicry, e.g. insects, birds.

(14) terrifying attitude, e.g. caterpillars, harmless reptiles.

(15) horns, teeth, claws, hoofs, as organs of defense and offense.

(16) defensive and offensive alliances, e.g. bisons, wild horses, wolves, monkeys, birds.

(17) insulation, e.g. marsupials in the Australian region, lemurs in Madagascar.

(18) parasitism, e.g. fluke, tape-worm, crustacea, insects.

References: Alfred Edm. Brehm, *Illustriertes Tierleben*, 10 vol., especially 3d edition 1892-93; Fritz Müller, *Für Darwin*, 1864; Beddard, *Animal Coloration*; Poulton, *Colours of Animals*; Gordon, *Animal Life*; Thomson, *The Study of Animal Life*; Wallace, *Natural Selection*; Carus, *Sterne, Werden und Vergehen*, 3d ed. 1886; O. Hertwig, *Die Symbiose*.

Other appropriate topics in zoology are as follows: Animal homes, such as birds' nests, dens, holes, holes in earth, holes in trees, insect homes

as cocoons, nests, hives. Prehension of food, that is, methods by which animals receive food.

Topics of general interest in plant life: Food plants of the old and the new world. Protections against the attacks of animals (spines, thorns, prickles, nettles, nauseous secretions), and adaptation to atmospheric influence. Distribution of plants, (1) distribution of seeds, (2) adaptation as determined by climatic conditions.

The fine zoological and botanical specimens in the Museum of the Chicago Institute, which are most skillfully selected and arranged, will be an excellent aid in bringing the pupil directly in contact with nature. Excursions to the parks of Chicago and the environments of the city, and visits to the Field Columbian Museum and the Academy of Sciences, will reinforce and expand the acquired knowledge. As to the field trips of the whole school, they can be made more profitable than they hitherto have been, so far as German is concerned. Upon arrangement with the other instructors, the teacher of German might take charge of a section of the pupils for an hour or so, or, at a proper time, he might give a lecture to all the German pupils.

Geography also offers a vast field for correlation. Out of the following general topics, a great variety of appropriate subjects may be chosen, according to the necessities of the time being.

I. General Geography:

1. The earth as a celestial body.
2. The earth as a physical body; (a) interrelations of land and sea, (b) the sea, (c) the land, (d) the atmosphere.
3. Life on the earth; (a) the earth as a dwelling place for man, (b) the five continents.

II. Commercial Geography:

Plants, animals, minerals, international commerce, transportation.

III. Astronomical Geography:

(a) apparent movements of the stars, (b) the earth and the real movements of the stars, (c) determining of locations.

IV. History of Geography.

V. Political Geography.

The composition work for the month of December is the subject of the Rhine, for all classes. All the special grammar and orthography for each class is included in this month's work. The pupils have a keen interest in this, one of the most interesting rivers, to see which a great number of tourists come from all parts of the world, and the beautiful scenery of which is glowingly described in English literature (e.g., Byron: *Childe Harold*, Canto III; Longfellow: *The Golden Legend*, *The Castle of Vautsburg on the Rhine*).

A field for correlation quite as extensive, if not more extensive than that of Geography, is offered by History. As a beginning, it is intended to devote February to a study of the American War of Independence.

There is no doubt that the other subjects of study, including even Gymnastics, may be profitably correlated. The general plan is not yet formulated.

Should there be a demand for instruction in the Pedagogic School, appropriate selections in psychology, pedagogics, and history of education may be made.

The German songs that have been taught by Miss Goodrich have proved an effective means of correlation. Art also promises well in this respect.

On holidays and at other fitting times, performances, either composed for the occasion or taken from some good author, may be given. Frequenting the Chicago German theatre is also desirable. The teachers of the different subjects might give their pupils references to German text books, cyclopedias, and general literature. That other languages reinforce the instruction in German, particularly in the case of advanced pupils, is a matter of course. To make this reinforcement possible, it is absolutely necessary that the teacher of German should be conversant with the

classical languages, Latin and Greek, and, if may be, with French.

In all correlation, one great principle must guide the teacher; that is, to go from the easy to the difficult without leaving gaps, and to include in the instruction the difficult parts of grammar, adapted to the comprehension of the pupil.

These statements lead to the inference that the teacher of German should have broad culture and high capacity; otherwise correlation, instead of being a potent factor in education, becomes a shallow and unmeaning thing, which is likely to do more harm than any of the old methods.

For January the topics in grammar, orthography, and writing, as given in December, will be continued in all classes. In the fifth grade will be added: (a) place of objects in the school-room; (b) grammar: sentences involving the imperfect of "sein" and the present tense of "haben;" (c) simple expressions as: *Wiegehtes Dir (Yhnen)?* and the answers.

The reading exercises for the beginners is contained in Ahn's *First German Book*; 6th and 8th grades in Ahn's *Second Course*; High school, 1st and 4th year, continuation of *Bilder buch ohne Bilder*; 2d year, completion of *Der Neffe als Onkel*, and extracts from *Die Jungfrau von Orleans*, and from *Maria Stuart* for January. The memorizing work, the importance of which was referred to in December, is given in the grade outlines.

French

Lorley Ada Ashléman

The work for January will center about the preparation for February, the carnival month. It is proposed to have the school represent a world carnival, in which a procession of the nations will be joined to the French festival outlined below. All nations have their fêtes, their carnivals. Egypt celebrated the festive days of the Bull Apis; the Jews, the festival of Purim to commemorate their deliverance from the massacre planned by Haman; the Greeks, their feasts of Bacchus, and the Romans the Saturnalia.

In Persia and Babylonia at the beginning of spring a beardless, and if possible one-eyed, buffoon was set on an ass, a horse, or a mule, and conducted in a sort of mock triumph through the streets of the city. In one hand he held a crow, in another a fan, with which he fanned himself, complaining of the heat, while the people pelted him with snowballs. After the second hour of prayer he disappeared. The purpose of the "ride of the beardless one" is obvious; it was meant to hasten the departure of winter and the appearance of summer. It seems

a pretty thought to believe the "confetti" originated in Persia, in the snowballing of the harlequin by the populace, personifying the departure of winter.

In French the work will center about the reign of Louis XIV., a period which has been chosen because it is one of the greatest in French history, and one of the richest in philosophy, literature, and art. To it belongs the father of comedy, Molière; of tragedy, Corneille; the fable - writer, La Fontaine; the mathematician, Pascal; the philosopher, Descartes; the theologians, Bossuet and Fénelon; the letter-writer, Mme. de Sévigné.

We will dramatize from the life of each one of these some little episode characteristic of the man's thought and work. In this way the work of the whole school will be correlated in the carnival. For example, interest in geometry will be deepened by a representation of the child Pascal discovering on the window-pane with a piece of charcoal the relations of the lines of a triangle.